COMPARISON IN INTRAOPERATIVE ENERGY DEVICES LIGASURE, HARMONIC SCALPEL AND ROBOTIC SCISSORS AND ITS CORRELATION TO DEVELOPING ILEUS POST OPERATIVELY IN GENERAL SURGERY

Introduction:
Postoperative ileus is a common complication following abdominal surgeries and often associated with delayed recovery and subsequent increased healthcare costs. Various surgical tools, such as the Robotic Scissors, Harmonic Scalpel, and LigaSure, are widely used to minimize tissue trauma and enhance procedural efficiency. However, the potential impact of these instruments on postoperative outcomes, including the incidence of ileus, remains a topic of interest.
This study aims to investigate whether there is a statistically significant difference in the rates of ileus among patients undergoing surgery with these three tools.
Procedure:
Retrospective data collection from 2017-2023 of all cancer resections which has taken place in our Hospital Trust onto a database. Subjects were divided into three energy device groups with multiple variables recorded including demographics, pre operative. We excluded all open cases, conversion to open cases and cases where multiple devices were used. We performed chi-square test compare the observed frequencies of ileus cases to see if there are any statistical differences between groups.
Results:
A total of 611 different cancer colon resection cases were reviewed. The median age of the patients was 71 (22-92) years; M:F 1:0.7. The study was divided into three groups Robotic Scissors, LigaSure and Harmonic. In the Robotic Scissors group, out of 101 total cases, 8 patients developed ileus, resulting in an ileus rate of 7.9%. For the Harmonic Scalpel group, there were 407 total cases, with 50 patients experiencing ileus, corresponding to an ileus rate of 12.3%. Lastly, in the LigaSure group, 103 total cases were recorded, with 10 patients developing ileus, leading to an ileus rate of 9.7%.
Based on the statistical analysis conducted using a chi-square test for independence, there is no significant difference in the rates of ileus among patients who underwent surgery with the Robotic Scissors, Harmonic Scalpel, or LigaSure. The p-value of 0.706 indicates that the observed differences in ileus incidence are not statistically significant at the conventional threshold of 0.05.
Conclusion: We conclude that the differences in ileus rates between these surgical tools are likely due to random chance, and there is no evidence to suggest that one tool is associated with a higher or lower rate of ileus compared to the others in this dataset.